Reply to: AWT-150

Certified Mail – Return Receipt Requested

Mr. Shimon Mizrahi
Managing Partner
Rainier Commons, LLC
3317 3rd Avenue South
Seattle, Washington 98134

Re: Amendment 5 to the Risk-Based Disposal Approval for Polychlorinated Biphenyl Bulk Product Waste at the Rainier Commons Facility, 3100 Airport Way South, Seattle, WA, EPA ID No. WAD 05123 9994

Dear Mr. Mizrahi:

This letter serves as Amendment 5 to the Risk-Based Disposal Approval to abate paint at Rainier Commons. Specifically it updates conditions in the Phase II Approval for abatement of paint on the south elevation of Building 15 at Rainier Commons (Amendment 4) dated July 11, 2016.

During the course of implementing Amendment 4 to the Risk-Based Disposal Approval (RBDA) several technical changes were made to improve the effectiveness of abatement activities and ensure no unreasonalbe risk of harm to health or the environment. The following conditions in Amendment 4 have been updated.

Condition 7:

a. Amendment 4 language: All personnel entering the interior or exterior containment structures, or conducting any cleaning or sample collection for PCB analysis shall do so wearing appropriate PPE as documented in the Health And Safety Plan in the Phase II IPWP to protect against PCB exposure.
b. Update in Amendment 5: This condition is clarified to state that personnel entering the interior containment structure do not require supplied air respirator or Tyvek coveralls, unless there is an active breach.

Condition 10.a.iii.:

a. Amendment 4 language: Rainier shall use a wind-sock or similar device to measure wind direction. Two EPAM-5000 dust monitoring devices fitted on a daily basis with a 47 mm 1.0 micron filter shall be placed near Negative Air Machine (NAM) exhausts downwind of the abatement activity. In accordance with the Work Plan and condition 10.b above, sampling devices shall be co-located with the dust monitors. Wind direction shall be assessed every 4 hours and monitoring devices moved accordingly.
b. Amendment 5 update: Because the EPAM-5000 dust monitoring devices are fitted with a filter which can be analyzed for PCBs and/or metals, redundant sampling devices co-located with the dust monitors are not necessary.

Condition 10.b.i.

a. Amendment 4 language: The dust concentration read-out from each EPAM-5000 machine shall be corrected according to the average correlation factor established for each machine, as noted below:

   Unit #497 correlation factor = 1.52
   Unit #498 correlation factor = 2.06
   All other Unit correlation factors = 1.79

b. Amendment 5 update: Rainier conducted additional gravimetric analysis. The following correlation factors are approved for use:

Unit #	Correlation Factor
497	1.25
498	1.43
728	.63
490	3.33
759	.1
186	.17
234	.65

Condition 10.b.ii:

a. Amendment 4 language: The daily Time Weighted Average of interior dust concentrations measured by the EPAM-5000 units exceeds 0.0282 mg/m^3, as corrected by each unit correlation factor according to Condition 10.b.i

b. Amendment 5 update: the Action Level was re-calculated to 1 mg/m^3, as corrected by each unit correlation factor ccording to condition 10.b.i. The following justification is provided. The original action level was a very conservative approach, based on variation from background dust. Background dust was measured from December, 2015 until April, 2016. This data was used to calculate an action level that was expected to be above 95% of all dust readings collected during the abatement activity. Unfortunately, abatement did not begin on schedule in April, and instead began July 15, 2016. The seasonal difference in particulate loads is significant, due to precipitation and pollen changes. Additionally, nuisance activities from neighbors generated new sources of dust in the vicinity of the abatement and monitoring activities at Rainier Commons. As a result, the interior dust monitors at Rainier Commons exceeded the action level based on background data every day – even on non-blasting days.

   Every time the daily Time Weighted Average (TWA) action level is exceeded, Rainier analyzes the filters in the dust monitors, as well as the additional sampling devies outside of secondary containment. Every sample has been non-detect for PCBs, except for one, which was 0.43 ug/m^3 for Aroclor 1254.

   With blasting activity underway, collecting new background data is not possible. A reasonable and protective approach is to move towards a health risk-based evaluative approach rather than continuing to monitor deviation from background.

   The building is unoccupied, so the approach is based on worker protection. The same approach was used to set the audible alarm action level for interior dust monitors in Condition 10.b.iii of Amendment 4. The equations, justifications and discussion for this are given in the Statement of Basis for Amendment 4.

Those caluclations demonstrate that a health risk-based action level of 1.56 mg/m^3 would be extremely protective. The highest concentration on building 15 is well below the maximum concentration used for the calculation (321,000 mg/kg). The maximum concentration on building 15 is only 1,560 mg/kg. An appropriate action level for the highest concentration of PCBs found on building 15 is 320.5 mg/m^3.

To ensure no unreasonable risk of harm to health or the environment, an action level 1 mg/m^3 is approved.

Addition of Condition 17: Rainier Commons elected to use a Cyclone HEPA filter inside the exterior containment structure during blasting activities to reduce the volume of airborn dust throughout the containment. Use of this equipment is approved, subject to the decontamination requirements in 40 C.F.R. §§ 761.79, and the inspection, cleaning and breakdown specifications detailed for the exterior containment structure and documented in the February 24, 2015 Workplan before being removed from site.

The terms and conditions of this approval are established pursuant to 40 C.F.R. §§ 761.62(c) and 761.61(c) and enforceable under the Toxic Substances Control Act (TSCA). Any actions which deviate from the terms and conditions of this approval may result in administrative, civil, or criminal enforcement in accordance with Sections 16 and 17 of TSCA, 15 U.S.C. §§ 2615 and 2616.

Should you have any questions or comments, please contact me at (206) 553-1616, or Mullin.Michelle@epa.gov.

Sincerely,

Michelle Mullin

Michelle Mullin,
PCB Coordinator

cc: Jo M. Flannery
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Enclosure 1
Statement of Basis

The following provides a limited Statement of Basis for some of the conditions in the Amendment where further explanation is warranted.

Discussion of Conditions:

10. Rainier shall conduct interior and exterior particulate dust monitoring in accordance with the Work Plan and subject to conditions below:
    a. Monitoring Requirements:
        i. Rainier shall place two EPAM-5000 dust monitoring devices between the interior containment barrier and secondary containment barrier (containment area) on each floor. Each monitor shall be fitted on a daily basis with a 47 mm 1.0 micron filter. Low-velocity fans shall be placed at either end of the containment area and pointed towards the dust monitors, to preferentially move air and dust towards the monitors. The sampling interval shall be over the duration of daily blasting activity. Location of monitors and fans shall be as depicted in the Dust Monitor Location email. Rainier shall set the audible alarm on the dust monitors at 2.0 mg/m^3. Rainier shall conduct hourly inspections to listen for the alarm. Filter samples shall only be analyzed pursuant to Condition 10.c below.
        ii. Rainier shall place two air sampling devices on each floor within the interior space, outside the containment area. Sample collection and analytical procedures are those used in Phase 1, documented in the June 9, 2014 PCB Air Sampling Plan for Phase 1 IPWP. These samples shall only be analyzed pursuant to Condition 10.c below.

As stated in an email from Doug Lansing to Michelle Mullin on Jan 27, 2015, sample collection and analytical procedures are equivalent to those used in Phase 1, documented in the June 9, 2014 PCB Air Sampling Plan for Phase 1 IPWP.

        iii. Rainier shall use a wind-sock or similar device to measure wind direction. Two EPAM-5000 dust monitoring devices fitted on a daily basis with a 47 mm 1.0 micron filter shall be placed near Negative Air Machine (NAM) exhausts downwind of the abatement activity. In accordance with the Work Plan and Condition 10.b above, sampling devices shall be co-located with the dust monitors. Wind direction shall be assessed every four hours and monitoring devices moved accordingly.
    b. Monitoring Decision Criteria:
    Rainier shall monitor the performance of blasting containment according to the following criteria:
        i. The dust concentration read-out from each EPAM-5000 machine shall be corrected according to the average correlation factor established for each machine, as noted below:
            Unit #497 correlation factor = 1.52
            Unit #498 correlation factor = 2.06

Rainier conducted gravimetric analysis for two EPAM-5000 machines, unit #497 and #498. Gravimetric analysis allowed a correlation factor between instrument particulate read-out versus actual particulate count as collected on a filter in the monitoring device for two EPAM-5000 units. Gravimetric analysis is underway for the four remaining EPAM-5000 dust monitoring machines. Until analysis is complete and an average correlation factor is established for each Unit, the average between the two Units tested will be applied. That value is 1.79. By July 14, 2016 Rainier will provide the average correlation factor for each remaining EPAM-5000 unit, at which time this condition will be amended.

ii. The daily Time Weighted Average of interior dust concentrations measured by the EPAM-5000 units exceeds 0.0282 mg/m^3, as corrected by each unit correlation factor according to Condition 10.b.i

Background particulate data collected from December 2015 through April 2016 was used to calculate a 95% UPL for dust in interior spaces. This value represents the upper limit for background dust levels inside Building 15, 95% of all daily TWA readings are expected to fall below this level. The 95% UPL for Building 15 is 0.0282 mg/m^3.

iii. The interior EPAM-5000 instrument audible alarm indicates an exceedance of the 3.3 mg/m^3 setpoint criteria during any hourly inspection;

The OSHA permissible exposure limit for Aroclor 1254 is 500 µg/m^3. This concentration is a time weighted average (TWA) based on an eight hour work day. That is, the average of all readings taken over eight hours should not exceed 500 µg/m^3. Given this averaging approach, there could be individual air Aroclor 1254 concentrations greatly exceeding 500 µg/m^3 and there would still be no health issues. The maximum Aroclor 1254 concentration in paint for the building 15 wall undergoing remediation was 1560 mg/kg. Other Aroclor 1254 concentrations in building 15 paint were: 10.3 mg/kg and 2.7 mg/kg with two non-detects that were about 0.9 mg/kg.

The dust concentration derived from worst case building 15 Arochlor 1254 paint concentrations that would result in an Aroclor 1254 concentration of 500 µg/m^3 may be computed as follows:
$mg_{dust}/m^3 = 500\ \mu g_{PCB}/m^3 \times kg_{dust}/1560\ mg_{PCB} \times 10^6\ mg_{dust}/kg_{dust} \times mg_{PCB}/10^3\ \mu g_{PCB}$
This results in an air concentration of 320.5 mg/m^3.
This is an exceedingly health protective dust concentration as it assumes that:

- The paint concentration of PCBs is not diluted by sand blasting material.
- That a time weighted average is of concern if exceeded for an instant.

The following table gives the cut off air concentration for the other paint concentrations:

Table 1: Dust Concentrations Such that Aroclor 1254 Air Concentrations Equal 500 µg/m^3

Aroclor 1254 Paint Concentration in mg/kg /Descriptor	Dust Concentrations such that PCB Air Concentrations Equal 500 µg/m^3
1560/Building 15	320.5
10.3/Building 15	48,543
2.7/Building 15	185,185
0.92/Limit of Detection for Building 15	543,478
321000/Maximum	1.56
150000/BPJ Reasonable Worst Case	3.33

All estimates of the acceptable dust concentration based on building 15 paint results exceed the total nuisance dust TWA established by OSHA of 15 mg/m^3. Thus a cutoff of **15 mg/m^3** would be acceptable as a basis for halting work.

A more health protective dust concentration cutoff might utilize higher Aroclor 1254 paint concentrations determined elsewhere in the Rainier Commons complex. In Table 1, the last two Aroclor 1254 paint concentrations correspond to maximum and BPJ reasonable worst case values. If these values are employed, the "acceptable" dust concentrations would be **1.6 and 3.3 mg/m^3** respectively.

Interior dust monitoring data collected between December, 2015 through April, 2016 demonstrate that dust concentrations inside building 15 naturally may be as high as 2.032 mg/m3. The audible alarm value of 3.3 mg/m3 was selected as a very conservative value for alerting workers to potentially unsafe conditions, while avoiding confusion with natural background variations in dust concentrations.

iv. The exterior EPAM-5000 instrument indicates an exceedance of the 0.05 mg/m^3 daily Time Weighted Average;

The purpose of outdoor air monitoring is to detect any excursion of dust from the abatement activity. The abatement enclosure will be under constant negative pressure, with an audible alarm alerting if the pressure drops below than 0.02" of water (see condition 10.b.vi). Air monitoring is therefore a back-up monitor methodology. In Phase I EPA set an Action Level (AL) of Not to Exceed (NTE) the "background" Time Weighted Average (TWA) + 0.05 mg/m^3 Total Solid Particulate Matter (TSP). 0.05 mg/m^3 was calculated based on the NIOSH REL of 0.001 mg/m^3 total PCBs in air using an upper bound concentration of PCB in paint of 20,000 mg/kg. PCB concentrations in paint on Phase I buildings was much higher than on Building 15 south where the highest concentration is 1,560 mg/kg. Therefore an AL of NTE background + 0.05 mg/m^3 TWA would be very protective. Exceedances of 0.05 mg/m^3 TWA were not observed in Phase I.

Phase 1 exterior background readings were established by collecting dust monitoring data over a 45 minute time interval at the beginning of the day, prior to blasting activity. However, that may not reflect true background conditions throughout the course of the day, due to the possibility of wind shifts as a natural daily occurrence. EPA considered setting up a continuous monitor "upstream" of the abatement activities, to establish a continuous background dust concentration over the duration of blasting activity. Local eddies and variations in wind patterns are highly likely at the Rainier complex, given the number of buildings on site and the unique layout. Because air monitoring is a back-up method for detecting a breach, detailed scientific modelling of local wind patterns around the complex of buildings to establish upstream versus downstream directions is not practical.

A more practical approach to detecting any excursions from the containment structure that are not otherwise identified through the manometer alarm is achieved through placing two EPAM-5000 machines downstream of the abatement activity, and utilizing a daily TWA 0.05 mg/m^3 as a conservative AL.

Verifying wind direction twice per day, and co-locating sampling devices for laboratory analysis (as required in Condition 10.a.iii) further ensures proper monitoring for potential breaches on site.

v. A breach of the containment structure to the interior space or the exterior environment is either observed by visual identification of dust, paint or blasting material;

vi. A manometer sensor identifies a reduction in differential pressure between the outside containment structure and ambient air greater than 0.02" of water.